

Enclosed is a check for \$1810, which includes both the \$790 fee for a request for continued examination; and the \$1020 fee to extend the time for response by three months, from January 6, 2006 to April 6, 2006.

If this amount is incorrect, please refer to the Deposit Account Authorization previously filed with this application. If any additional extension of time is required, please consider this paper a petition for the total extension of time required.

Remarks

The Claims have been amended by amending Claims 62, 69, 71, 72, and 82; by canceling Claims 64-68, and 83-84; and by adding new Claims 85-95.

Claims 62, 63, 69, 71, 72, 82, and 85-95 remain in the application.

Claims 63, 69, 71, 72, and 82 have been held to be withdrawn from consideration.

Independent Claims 62 and 71 have been amended to refer to a "herbicidally-effective imidazolinone" in part (b) of each claim, rather than a "herbicide that normally inhibits acetohydroxyacid synthase." Basis for these amendments is found throughout the specification, including for example page 6, lines 20-31; and page 29, lines 11-23.

Independent Claims 62 and 71 have also been amended to refer to expression of "a mutant acetohydroxyacid synthase whose enzymatic activity is directly resistant to normally-inhibitory levels of a herbicidally-effective imidazolinone." Basis for these amendments is found, for example, in the specification at page 7, lines 13-28. This passage gives a prophetic example for an enzyme activity assay that had not been conducted as of the international filing date. The assay has subsequently been conducted, and the results confirmed the predictions of the prophetic example. See, e.g., the data presented in the inventor's U.S. Patent 6,943,280, Col. 27, line 7 through Col. 28, line 67, including Table 5. (The '280 patent is of record in this case. It was cited by the October 6, 2006 Office Action in connection with the double patenting rejections.)

Independent Claims 62 and 71 have also been amended to refer to the rice plants' resistance and sensitivity to specific herbicide compounds. Basis for these amendments is found, for example, in the specification at pages 12-23, including the tables found on those pages. Please note that: (1) The PWC16 line shown in the tables is the same as the line PTA-904 mentioned in the Claims. See page 11, lines 7-21 of the specification, as previously amended by the August 22, 2001 Preliminary Amendment. (2) The use of the terms "resistant" and "sensitive" in the claims is consistent with the definitions appearing in the specification at page 30, line 28 through page 31, line 13.

Following the amendments to independent Claims 62 and 71, former dependent Claims 64, 66, 68 and 83-84 would have become either redundant or inconsistent. Accordingly, Claims 64, 66, 68, and 83-84 have been canceled.

For clarity, former Claim 65 has been replaced with new Claim 85.

For clarity, former Claim 67 has been replaced with new Claim 91.

Dependent Claim 69 has been amended to depend from independent Claim 62, rather than from canceled Claim 68. Some of the alternative limitations were deleted from Claim 69.

Dependent Claims 72 and 82 have been amended for clarity in light of the amendments to independent Claim 71.

Basis for new Claims 85-95 is found, for example, in the specification at page 6, lines 26-28; pages 12-23, including the tables on those pages; and Claims 65, 67, and 69 as originally filed. New Claims 85-95 correspond to Group II, as identified in the December 11, 2002 Restriction Requirement.

The amendments to the specification clarify the status of patent application 09/351,889, which was cited twice. That application has now issued as patent 6,274,796. The citations have been corrected to refer to the issued patent number. The 09/351,889 application *per se* was never published. Thus a reference to the issued patent rather than to the patent application will allow the public to more easily locate the cited reference once the present application has issued as a patent.

Reexamination and reconsideration of the application, as amended, are respectfully requested.

ARGUMENTS

6. The Non-Elected Process Claims Should be Rejoined After the Product Claims Have Been Allowed

Applicant respectfully submits that once the elected Claims to the rice plants have been allowed, the non-elected Claims directed to processes for making and using the rice plants should then be rejoined and examined in the same application. In particular, the Office's attention is respectfully directed to M.P.E.P. § 821.04, which provides for rejoinder of process Claims in such a case.

Note particularly that rejoinder under M.P.E.P. § 821.04 does not depend upon whether the original election was made with or without traverse.

Applicant interprets the Office's June 3, 2004 and October 6, 2005 comments on this point as agreeing with Applicant's position in principle.

New Claims 85-95 correspond to Group II, as identified in the December 11, 2002 Restriction Requirement.

7. The Written Description Rejection

Claim 62 was rejected as containing subject matter that lacked an adequate written description in the specification.

Claim 62 has been revised to include an extensive "fingerprint" characterization of the claimed rice plants. Claim 62 now includes the following limitations:

(d) the rice plant expresses a mutant acetohydroxyacid synthase whose enzymatic activity is directly resistant to normally-inhibitory levels of a herbicidally-effective imidazolinone;

(e) the rice plant is resistant to each of the following imidazolinone herbicides, at levels of the imidazolinone herbicides that would normally inhibit the growth of a rice plant: imazethapyr, imazapic, imazaquin, imazamox, and imazapyr;

(f) the rice plant is resistant to each of the following sulfonylurea herbicides, at levels of the sulfonylurea herbicides that would normally inhibit the growth of a rice plant: nicosulfuron, metsulfuron methyl, thifensulfuron methyl, and tribenuron methyl; and

(g) the rice plant is sensitive to each of the following sulfonylurea herbicides, at levels of the sulfonylurea herbicides that would normally inhibit the growth of a rice plant: sulfometuron methyl, chlorimuron ethyl, and rimsulfuron.

A “fingerprint” description is an accepted manner to claim a composition that may have only been partially characterized as of the filing date. This “fingerprint” description satisfies the objections of the October 6, 2006 Office Action. In the sentence bridging pages 4-5 of the Office Action, the Office said that the “written description requirement for a claimed genus may be satisfied” by, among other possibilities, “disclosure of relevant, identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics”

Amended Claim 62 does exactly that. It recites a combination of identifying characteristics, specific properties that characterize the claimed rice plants, including the following properties:

- expression of a mutant, herbicide-resistant AHAS enzyme;
- resistance to five specified imidazolinone herbicides;
- resistance to four specified sulfonylurea herbicides; and
- sensitivity to three specified sulfonylurea herbicides.

Particularly note that amended Claim 62 states that the rice plant is sensitive to three specified sulfonylurea herbicides (part (g)). Claim 62 does not attempt to claim any and all herbicide-resistant rice plants. Rather, amended Claim 62 defines a “fingerprint” of herbicide-response characteristics: the rice plant of Claim 62 is resistant to five specified imidazolinones; it is resistant to four specified sulfonylureas; and it is sensitive to three specified sulfonylureas. Additionally, the rice plant expresses a resistant AHAS enzyme.

Note that the use of the terms “resistant” and “sensitive” in the Claims is consistent with the definitions in the specification at page 30, line 28 through page 31, line 13.

The written description requirement of section 112 requires that the specification “reasonably” convey that the inventor was in possession of the claimed invention. (October 6, 2005 Office Action, p. 4, first full paragraph.) Section 112 does not require that all aspects of a novel composition must be fully and completely characterized before a patent application is filed.

The carryover paragraph on the top of page 5 of the Office Action describes another purpose of the written description requirement: to give innocent third parties notice of what the claimed invention is. The “fingerprint” definition satisfies this goal.

A third party may readily determine whether the traits of any given rice plants are consistent or inconsistent with the "fingerprint" of amended Claim 62. Section 112 does not require more.

It is respectfully submitted that the amendments to independent Claim 62 overcome the written description rejection.

8. The Enablement Rejection

Claim 62 was rejected as containing subject matter that was not enabled by the specification.

The rationale for this rejection is not fully understood, although it appears to pertain to the term of the ATCC deposit of the seeds.

The October 6, 2005 office action at pages 5-7 discusses the ATCC deposit of seeds. The last sentence of the first paragraph on page 6 of the office action acknowledged "that applicants have deposited the plant" but asserted that "there is no indication in the specification as amended in the preliminary amendment filed 22 August 2001 as to the term of the deposit under 37 CFR § 1.806."

The Office's attention is respectfully directed to the paragraph appearing in the specification at page 11, lines 7 to 21. Both before and after that preliminary amendment, one portion of this paragraph reads:

Each of the contracts with ATCC provides for permanent and unrestricted availability of these seeds or the progeny of these seeds to the public on the issuance of the U.S. patent describing and identifying the deposit or the publication or the laying open to the public of any U.S. or foreign patent application, whichever comes first, and for the availability of these seeds to one determined by the U.S. Commissioner of Patents and Trademarks (or by any counterpart to the Commissioner in any patent office in any other country) to be entitled thereto under pertinent statutes and regulations. The assignee of the present application has agreed that if any of the seeds on deposit should become nonviable or be lost or destroyed when cultivated under suitable conditions, they will be promptly replaced on notification with a viable sample of the same seeds.

The specification clearly states that the contracts with ATCC provide not only for the “permanent and unrestricted availability of these seeds,” but also that if the “seeds on deposit should become nonviable . . . they will be promptly replaced”

It is respectfully submitted that the existing seed deposit complies with all applicable requirements concerning the deposit of biological materials, and that the enablement rejection should be withdrawn.

9. The § 102(b) Rejection

Claim 62 was rejected under 35 U.S.C. § 102(b) as being anticipated by Terakawa.

The reasons given in the May 13, 2003 Amendment for distinguishing Terakawa – reasons that will not be repeated in the interest of brevity – still fully apply. For the reasons given there, it is respectfully submitted that the Terakawa paper on its face is clearly distinguishable from the claimed inventions.

An additional basis for distinction is that Terakawa discloses the use of bensulfuron methyl, which is a sulfonylurea herbicide. Independent Claim 62 has been amended to refer to selection with a “herbicidally-effective imidazolinone” (parts (b) and (c)). Independent Claim 62 also requires resistance to five specific imidazolinone herbicides (part (e)). Terakawa discloses no plants that purport to be resistant to imidazolinones.

Terakawa does not anticipate the claimed inventions. It is respectfully submitted that this ground of rejection should be withdrawn.

11. The Same Invention-Type Double Patenting Rejection

Claim 62 was rejected for same invention-type double patenting over Claim 16 of the issued 6,943,280 patent.

As amended, independent Claim 62 refers to “crossing or back-crossing in the presence of at least one herbicidally-effective imidazolinone” (part (b)), while Claim 16 of the '280 patent refers to “crossing or back-crossing in the presence of at least one herbicide that normally inhibits acetohydroxyacid synthase” (part (b)).

These two limitations differ. Herbicides that inhibit acetohydroxyacid synthase include not only imidazolinones, but also multiple classes of other compounds, including sulfonylureas, triazolopyrimidines, sulfamoylureas, sulfonylcarboxamides, sulfonamides, pyrimidyloxybenzoates, phthalides, pyrimidylsalicylates, carbamoylpyrazolines, sulfonylimino-triazinyl heteroazoles, N-protected valylanilides, sulfonylamide azines, pyrimidyl maleic acids, benzenesulfonyl carboxamides, substituted sulfonyldiamides, and ubiquinone-o. See the specification at page 28, lines 22-30.

It is respectfully submitted that this ground of rejection should be withdrawn.

13. The Obviousness-Type Double Patenting Rejection

Claim 62 was rejected for obviousness-type double patenting over Claim 11 of the issued 6,943,280 patent.

Applicant is willing to file a terminal disclaimer over the '280 patent, once the Office has indicated that this application is otherwise in condition for allowance.

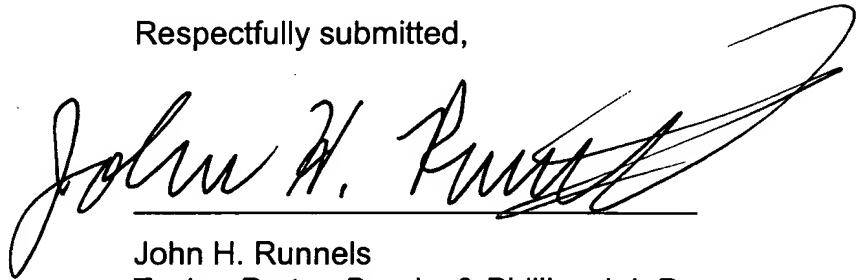
In the interim, the Office is respectfully requested to hold this ground of rejection in abeyance.

Conclusion

Allowance of all pending Claims at an early date is respectfully requested. The previously withdrawn Claims should now be rejoined, examined, and allowed.

In the alternative, should the Examiner identify any remaining issues, the Examiner is respectfully requested to contact the undersigned to schedule a telephone interview before further action is taken, to discuss whether it might be possible to resolve any such issues quickly, and to conclude the prosecution of this application.

Respectfully submitted,

A handwritten signature in black ink, reading "John H. Runnels", is written over a horizontal line. The signature is stylized with a large, sweeping initial 'J' and a long, horizontal flourish at the end.

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